CLAIMS:

1. A method of making a microelectronic assembly comprising:

(a) juxtaposing a first element having conductive leads thereon with a second element having contacts thereon;

(b) wire bonding the conductive leads on the first element to the contacts on the second element so that elongated bonding wires extend between said conductive leads and said contacts;

(c) after said wire bonding step, moving the first and second elements through a preselected displacement relative to one another so as to deform the bonding wires.

2. The method as claimed in claim 1, further comprising bonding said microelectronic assembly to a printed circuit board.

3. The method as claimed in claim 1, wherein said first element includes a dielectric substrate having top and bottom surfaces, said conductive leads being exposed to the top surface of said dielectric substrate, said juxtaposing step including juxtaposing the bottom surface of said dielectric substrate with said second element.

4. The method as claimed in claim 3, wherein said dielectric substrate has one or more apertures therein, said apertures being substantially aligned with the contacts of said second element during the juxtaposing step, the wire bonding step including extending the bonding wires between said conductive leads and said contacts and through said one or more apertures in said dielectric substrate.

5. The method as claimed in claim 3, wherein said second element includes one or more semiconductor chips.

6. The method as claimed in claim 5, wherein said second element includes a plurality of semiconductor chips.

7. The method as claimed in claim 6, further comprising severing said first element and separating said chips from one another to form a plurality of individual packages, each said package including at least one of said chips and a portion of said first element.

8. The method as claimed in claim 6, wherein said second element is a semiconductor wafer including a plurality of semiconductor chips.

9. The method as claimed in claim 7, wherein said second element is a semiconductor wafer including a plurality of semiconductor chips.

10. The method as claimed in claim 6, wherein said second element includes a plurality of semiconductor chips attached to a supporting substrate, the method further comprising severing the supporting substrate for separating the semiconductor chips from one another after the wire bonding step.

11. The method as claimed in claim 7, wherein said second element includes a plurality of semiconductor chips attached to a supporting substrate, the method further comprising severing the supporting substrate for separating the semiconductor chips from one another after the wire bonding step.

12. The method as claimed in claim 3, further comprising introducing a flowable dielectric material between said first and second elements and around the bonding wires during or after the moving step and then curing the flowable material so as to form an encapsulant around at least a portion of said bonding wires.

13. The method as claimed in claim 12, wherein said encapsulant is compliant.

14. The method as claimed in claim 12, wherein said step of introducing a flowable material includes introducing said flowable material under pressure between said first and second elements.

15. The method as claimed in claim 14, wherein said step of introducing said flowable material is performed during the moving step so that said first and second elements move away from one another at least partially under the influence of the pressure of said flowable material.

16. The method as claimed in claim 12, wherein said dielectric support has one or more apertures therein, said apertures being substantially aligned with said contacts during the juxtaposing step, said step of wire bonding being performed so that the bonding wires extend through said one or more

apertures, the method further comprising the step of sealing said apertures prior to introducing said flowable material.

17. The method as claimed in claim 13, wherein said dielectric support has one or more apertures therein, said apertures being substantially aligned with said contacts during the juxtaposing step, said step of wire bonding being performed so that the bonding wires extend through said one or more apertures, the method further comprising the step of sealing said apertures prior to introducing said flowable material.

18. The method as claimed in claim 14, wherein said dielectric support has one or more apertures therein, said apertures being substantially aligned with said contacts during the juxtaposing step, said step of wire bonding being performed so that the bonding wires extend through said one or more apertures, the method further comprising the step of sealing said apertures prior to introducing said flowable material.

19. The method as claimed in claim 15, wherein said dielectric support has one or more apertures therein, said apertures being substantially aligned with said contacts during the juxtaposing step, said step of wire bonding being performed so that the bonding wires extend through said one or more apertures, the method further comprising the step of sealing said apertures prior to introducing said flowable material.

20. The method as claimed in claim 16, wherein said step of sealing said apertures includes applying a sealing sheet on the top surface of said dielectric support so as to close said apertures.

21. The method as claimed in claim 17, wherein said step of wire bonding is performed so that prior to said moving step, said bonding wires include loop portions projecting upwardly from said top surface of said dielectric support, and wherein said step of applying a sealing sheet includes forming said sealing sheet so that portions of the sealing sheet remote from the loop portions of said bonding wires lie against the top surface of the sheet whereas other portions of the sealing sheet extend over the loop portions of the bonding wires.

22. The method as claimed in claim 17, wherein said step of wire bonding is performed so that prior to said moving step, said bonding wires project in a plane substantially parallel to said top surface, from said bonding terminals to said apertures, said bonding wires being curved in horizontal directions.

23. The method as claimed in claim 16, wherein said step of sealing said apertures includes engaging a mold plate with said top surface of said dielectric sheet.

24. The method as claimed in claim 23, wherein said step of wire bonding is performed so that prior to said moving step, said bonding wires include loop portions projecting upwardly from said top surface of said dielectric support, and wherein said mold plate has an abutment surface for engaging said top surface of said dielectric sheet and upwardly-extending recesses extending into said mold plate from said abutment surface, said loop portions being received in said recesses.

25. The method as claimed in claim 24, wherein portions of said flowable material penetrate into said recesses and form projections extending from said top surface of said dielectric sheet after said curing step.

26. The method as claimed in claim 1, further comprising providing an expandable structure between the first and second microelectronic elements, wherein the moving step includes expanding the expandable structure.

27. A microelectronic assembly made according to the process of claim 1.

28. A method of making a microelectronic assembly comprising:

(a) juxtaposing a first element with a second element so that said first element is disposed above said second element;

(b) providing leads extending between said elements, said leads being curved in a vertical direction, said leads including loop portions projecting upwardly from said dielectric sheet;

(c) after providing said leads, moving the first and second elements through a preselected displacement relative to

one another so as to deform the leads, wherein said loop portions are pulled toward said dielectric sheet during said moving step.

29. The method as claimed in claim 28, wherein said moving step includes moving said elements with a vertical component of motion relative to one another.

30. The method as claimed in claim 28, wherein said dielectric sheet includes at least one aperture and wherein, prior to said moving step, said loops project upwardly from said top surface and downwardly into said at least one aperture so that portions of said leads extending into said at least one apertures connect with said second element, said loops being pulled downward into said aperture during said moving step.

31. The method as claimed in claim 28, further comprising providing an expandable structure between said first and second microelectronic elements, wherein the moving step includes expanding the expandable structure.

32. A microelectronic assembly made according to the process of claim 28.

33. A method of making a microelectronic assembly comprising:

juxtaposing a connection component having leads with a microelectronic element having contacts thereon;

electrically interconnecting the leads and the contacts using conductive wires having first ends attached to the leads and second ends connected to the contacts;

after the electrically interconnecting step, moving the connection component and the microelectronic element relative to one another so as to deform the conductive wires.

34. The method as claimed in claim 33, wherein the moving step includes securing a first platen to said connection component and a second platen to said microelectronic element and moving said platens through a preselected displacement.

35. The method as claimed in claim 33, wherein said connection component has a top surface, a bottom surface and a bond window extending between the top and bottom surfaces, and wherein said leads include frangible ends extending into the bond window.

36. The method as claimed in claim 35, wherein the electrically interconnecting step includes bonding the second ends of the conductive wires to the frangible ends of said leads.

37. The method as claimed in claim 36, wherein the electrically interconnecting step further includes bonding the frangible ends of the leads to the contacts of the microelectronic element.

38. The method as claimed in claim 37, further comprising separating the frangible ends of the leads from the leads during the moving step.

39. The method as claimed in claim 33, further comprising providing a support surface under the frangible ends of the leads when attaching the second ends of the conductive wires to the frangible ends of the leads.

40. The method as claimed in claim 33, wherein the connection component includes a top surface, a bottom surface and one or more bond windows extending between the top and bottom surfaces, said connection component including the leads extending adjacent the bond windows and conductive pads in substantial alignment with the leads.

41. The method as claimed in claim 40, wherein the second ends of the wire bonds are attached to the conductive pads.

42. The method as claimed in claim 41, wherein the conductive wires are broken adjacent the second ends thereof, the second ends being bonded to the contacts during the electrically interconnecting step.

43. The method as claimed in claim 33, further comprising introducing a curable liquid material between the connection component and the microelectronic element.

44. The method as claimed in claim 33, further comprising providing an expandable structure between said connection component and said microelectronic element, wherein the moving step includes expanding the expandable structure.

45. A microelectronic assembly made according to the process of claim 33.

46. A method of making a microelectronic assembly comprising:

providing a first microelectronic element including a top surface having leads with fixed ends and releasable ends, the top surface of the first microelectronic element having contacts;

juxtaposing a second microelectronic element having contacts on a contact bearing face and a rear surface with the first microelectronic element so that the contact bearing face confronts the top surface of said first microelectronic element;

attaching the contacts of said second microelectronic element with the releasable ends of the leads of the first microelectronic element;

juxtaposing a third microelectronic element having a contact bearing face and a rear surface with the rear surface of said second microelectronic element so that the rear surfaces of said first and second microelectronic elements confront one another and the contacts of the third element face away from the first microelectronic element;

wire bonding the contacts of the third microelectronic element with the contacts of the connection component;

moving said second and third microelectronic elements away from said first microelectronic element so as to deform the bonding wires.

47. A microelectronic assembly made according to the process of claim 46.

48. A packaged microelectronic element comprising:

(a) a microelectronic element having contacts on a front surface;

(b) a dielectric sheet having connection terminals exposed to a top surface, said sheet being disposed above said microelectronic element with said top surface facing away from said microelectronic element;

(c) leads connecting said connection terminals to said contacts of said microelectronic element;

(d) an encapsulant layer disposed between said dielectric sheet and said front surface of said microelectronic element, said encapsulant layer having projections formed integrally with the encapsulant layer and extending upwardly beyond said top surface of said dielectric layer.

49. A packaged element as claimed in claim 48 further comprising masses of an electrically conductive bonding material engaged with said connection terminals and projecting upwardly from said top surface of said dielectric sheet beyond said projections.

50. A packaged element as claimed in claim 48 wherein said leads extend within said projections.

51. A packaged element as claimed in claim 50 wherein said leads are curved in vertical directions and include loops projecting upwardly from said top surface of said dielectric sheet within said projections.